ARBOR DAY

MASSACHUSETTS

1907

Philip Lyford—

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IN

MASSACHUSETTS.

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Commonwealth of Massachusetts.

STATE BOARD OF AGRICULTURE,
OFFICE OF THE SECRETARY, STATE HOUSE, BOSTON.

The Arbor Day pamphlet of last year met with such an appreciative reception that it has been thought best to continue the publication, at least for another year.

The edition has been increased to 3,500 copies, and arrangements have been made, as last year, to send most of the copies to superintendents of schools for use in the public schools of the Commonwealth. This has been made possible through the courtesy of the secretary of the State Board of Education.

It is desired at this time to correct or explain a statement made in last year's issue, to the effect that it was "the first of its kind to be issued by the Commonwealth of Massachusetts." While this statement was literally true, it is a fact, nevertheless, that the State Board of Education issued in 1892 and 1893 leaflets entitled "Circulars for Arbor Day."

In the preparation of this pamphlet, as will be seen, this office has been assisted by the State Forester, the State Nursery Inspector, the Ornithologist to this Board, and the State Federation of Women's Clubs. The cover design is from the pen of Mr. Philip Lyford of Worcester. His Excellency Governor Guild has kindly consented to the insertion of his "Arbor Day Proclamation," issued by him in conformity to the provisions of chapter 32 of the Resolves of 1886.

J. LEWIS ELLSWORTH,
Secretary.

NEED OF AN ARBOR DAY IN MASSACHUSETTS.

By Prof. F. W. Rane, State Forester.

Any movement that has back of it an inspiration toward bettering the conditions of the State and nation should be fostered, encouraged and upheld. Arbor Day is an institution generally recognized throughout the nation as a day set apart for the planting of trees.

There are few problems of more general interest, concerning which all public-spirited and country-loving people recognize the need of careful adjusting and systematizing to serve our economic and æsthetic uses throughout this Commonwealth, than that of forestry.

When our forefathers came to these shores, New England was a vast wilderness; the primeval forest in all its grandeur must have presented a magnificent spectacle. We are told that in earlier days Massachusetts was noted for her beautiful timber growth, and the spars cut here for use in the English navy were so long, symmetrical and graceful as to bring renown to the good old Bay State the world over. These facts are significant in demonstrating that right here we have a natural forest country, and perhaps unsurpassed in the fundamentals for great possibilities in modern forestry.

We hear much nowadays about our wasteful and depleting methods of forest management, and we are aware that in practically each of our over 300 towns in this State there are acres upon acres, amounting in the total to 3,000,000 in the whole State, of lands that are practically worthless. These acres for the most part were never intended for agricultural purposes other than the wood or lumber crop, and we should return them as rapidly as possible to forestry.

When we have learned to systematize our efforts along agricultural endeavor and practice modern rural economics, it will be perfectly clear that both the practical and the æsthetic will go hand in hand. Our unsightly rocky, hilly, sandy and depleted lands can and should be utilized in some way, and for a definite purpose. These lands have all been covered with forests, and they should again be reclothed. Every acre of land not adapted to cultivation should be brought into forest growth, and when once reclothed modern methods of forest management should be practiced, so as never to allow it to again become depleted.

In earlier days every rural community and practically every farm had its wood growth area, and during the winter months the laborers of the farm here found employment. A natural rotation of the tree crop was carried on, as only the large and mature trees were harvested, the immature ones in turn similarly treated when arriving at maturity. This kept the land in forest or tree growth. To-day the practice is to sell the standing growth, and the portable mill man cuts not only the saw logs, but takes the last pound of flesh and strips everything clean. Fires often follow, and the result is in reducing the land to its lowest possible condition. Where in earlier days we were able

Illustration of Common Method of depleting Forest Lands.

to again go over the area and cut saw logs in from twenty or more years, according to present practices it will take twice as long or longer, and unless nature is assisted in her reclaiming methods, much of these ill-treated lands will ever remain as they are.

As a State we are at an interesting stage; forest products have been relatively cheap until recently, and we have had little impetus to practice forest management or attempt reforestation other than from the æsthetic standpoint. Prices now guarantee that both reforestation and forest management are practical and economic problems. Even box boards, the cheapest of white pine lumber, sell from $14 to $20 a thousand, — a price in excess of even square-edged and prime lumber not many years ago. To-day trees heretofore valueless have all come to be of commercial importance.

Arbor Day in its broadest sense stands for not only beautifying and adorning our streets, towns and homes with the appropriate planting of desirable trees for shade and ornament, but in practicing modern forestry, and encouraging through public recognition the great blessings to come from our association with and proper uses of trees from every point of view.

In emphasizing the economic the writer would not for an instant depreciate the æsthetic. In many respects a country whose natural forest lands are well-wooded approaches æsthetic conditions, nevertheless, much more can be done. The setting of trees along the highway, about the home grounds, in public squares, about our schools and churches, etc., all has its desired effects.

Probably one of the greatest blessings to come from Arbor Day is in imparting to the younger generations, through our schools, granges, clubs, town improvement associations, etc., a deeper interest and greater love for trees, and hence for nature herself. Future generations will appreciate, enjoy and take pride in their respective towns throughout this good old Bay State largely in proportion to the interests they inherit through environment and example.

The present need of an Arbor Day in Massachusetts is apparent for the great possible good it may do. The significance of the day is surely apparent, and the only question is whether we appreciate even yet the full possibilities that are ours to enjoy in furthering these interests in this State.

Arbor Day stands for and points towards a permanent forest policy. The greatest of all needs, however, — and we must come back to it as the foundation upon which our whole forestry structure must stand for success, — is a well-defined educational system, by which our people may be taught not only to recognize the importance of forestry, but how to get best results from a practical knowledge of the theory and practice combined.

In conclusion, I would say let us be wise and far-sighted. The Massachusetts and New England of the future will be what you and I make it. History repeats itself. In the Old World the rise and fall of the Roman Empire had its associations with commercial forestry. Spain, once the country of equitable climatic conditions and beautiful meadows, the native country of the merino sheep and a progressive and prosperous agriculture, has cut down her forests and denuded her mountains, and what is her present condition? We are told that in Biblical times certain valleys in Palestine

were so fertile that they sustained and nourished great flocks and herds; figuratively speaking, these valleys flowed with milk and honey. In those days the cedar of Lebanon and other forest trees were found in all their glory. What sort of a country is Palestine to-day? Travelers tell us it is dangerous to travel without a guide; the country is parched, dry and desolate.

What do we propose for the future of this nation, or, for that matter, Massachusetts? If we are public-spirited, as I believe we are, and have a love for our country and Commonwealth, we will awake to our responsibility ere it is too late.

Instead of following the example of countries like those mentioned, let us emulate the example of Germany, where modern forestry is practiced successfully. Then, and only then, can we feel proud in believing we have done our full duty toward the forest interests of our native land.

FORESTRY WORK OF THE WOMEN'S CLUBS.

By Helen A. Whittier, President of the Massachusetts State Federation of Women's Clubs.

For four years many of the women's clubs of Massachusetts have been interested workers for improved forestry conditions, under the guidance of a judicious and enthusiastic committee of the Massachusetts State Federation of Women's Clubs. But for a much longer period several of the clubs have included in their year's work the care and protection of city trees; they have worked for the extermination of tree pests, have planted shade trees by roadsides and avenues, and have been constant in their observance of Arbor Day.

Some of these clubs were organized in the first instance for village improvement, and naturally arboriculture has been one of their chief objects. They have recognized the fact that the beauty of our older New England villages is largely due to the noble trees planted by our forefathers, and they have set themselves the task of perpetuating this beauty.

Several of our large city clubs have for a long time done notable work in planting trees, continuing their efforts systematically year after year; others have worked strenuously to save trees in public streets from destruction by animals, and by telephone and electric light companies; one club wire-guarded 12,000 trees in one year. In the very beginning of the invasion of the gypsy moth the women's clubs in the infested districts were to be found in the van of the fighting forces.

With this widespread interest in local tree-preservation already existing among the clubs, the Department of Forestry, when established by the State Federation in 1903, found an excellent foundation for its work. The chairman, Mrs. Cora C. Stuart Jones of Roxbury, who had long been an enthusiastic leader in the movement, assigned to each member of her committee some special phase of the subject, with the result that much intelligent work has

been done along all lines. The main object has been to unify the work already in hand, to bring about co-operation among the clubs, and to lead them through their interest in local problems to a realization of State and national issues. By extensive correspondence and the distribution of literature, by forestry talks and by conferences with club committees, the department has helped to educate the clubs in Massachusetts and in several other States in regard to the important issues of forestry.

Perhaps the most obvious result of its work has been the continuous and vigorous campaign against the gypsy and brown-tail moths. Field days have been arranged, with practical demonstrations of the best methods of extermination; illustrated literature and suggestions for the control of tree pests have been posted in public places, and sent not only to clubs but to every grange in Massachusetts; and with admirable forethought a campaign of education, including prizes for essays on the life history of moths, has been started among the children of western Massachusetts, in preparation for the expected invasion of that section by the pests. That the women's clubs have responded bravely to the call is shown in the reports of the committee, which state that almost every club in moth-infested districts has distributed literature, held mass meetings, given prizes to children for destruction of nests, and aroused public sentiment to protect the trees. One club has paid $600 to clean the trees of its locality; and another club, by obtaining the aid of children, secured the burning of 375,000 gypsy moth nests in one season. While waging this hand-to-hand fight, the forestry committee also brought continuous pressure to bear upon the Legislature to obtain an appropriation for the extermination of tree pests by means of parasites.

To encourage and assist club study, a forestry program was prepared by the committee and published in "The Federation Bulletin," also distributed widely in leaflet form to clubs in Massachusetts and other States. It contains valuable suggestions for practical forestry work and study by clubs. Tree planting, tree protection, planting of berry-bearing trees as bird food, protection of birds, reforesting waste lands, forming children's auxiliaries, encouraging the celebration of Arbor Day, and urging the study of economic forestry, are some of the topics suggested.

Nearly a hundred clubs in the State Federation have appointed forestry committees, and others have formed classes for nature and forestry study.

In its work for a wider observance of Arbor Day, especially in the schools, the Forestry Department has been so fortunate as to enlist the valuable assistance of the Massachusetts State Board of Agriculture, with the result that this Arbor Day annual has been published for distribution to teachers and pupils throughout the State.

The General Federation of Women's Clubs, which unites in its membership 46 State federations, comprising 5,000 clubs, has a forestry committee composed of all the chairmen of State forestry committees. In this way the work is unified all over the country, and the needs of each section become known to all. Active interest has been aroused in every State for the preservation of the big trees of California, as well as for the establishment of national forest reservations east of the Mississippi.

Six thousand club women in Massachusetts signed petitions last year, which were sent to Congress, praying that the forest cover of the southern Appalachian range, as well as that of the White Mountains, might be saved from the lumber and pulp mill. The club women are learning the important lesson that besides the æsthetic phase of the question there is the scientific economic phase, which deserves the most serious attention. The General Federation committee on forestry in its latest circular urges the clubs to consider the economic meaning and importance of forestry, and to give to their members a definite presentation of this most vital subject, which affects the health of the people, the amount and distribution of rainfall, — thus controlling the freshets and corresponding seasons of drought, and equalizing the climatic conditions of the country, — and provides for the constant and increasing demand for forest products.

At the autumn meeting of the Massachusetts State Federation, held at Peabody, Nov. 9, 1906, a most picturesque presentation of the economic problems involved in the preservation of the forests of America was made by Mr. Enos Mills of Colorado, who stirred his hearers deeply by his graphic descriptions of his life in the forests, and his eloquent portrayal of the vast benefits which accrue to the human race from the forests, and the birds and animals which inhabit them.

The Forestry Department of the Massachusetts State Federation is impressed with the importance of educating the children to a right understanding of the value of the trees and forests of our country, the necessity for their preservation and the protection of the bird life so indispensable to tree life, and welcomes the opportunity given by Arbor Day for the inculcation of a deeper love for " Our Friends, the Trees."

HOW TO PROTECT TREES FROM INSECTS.

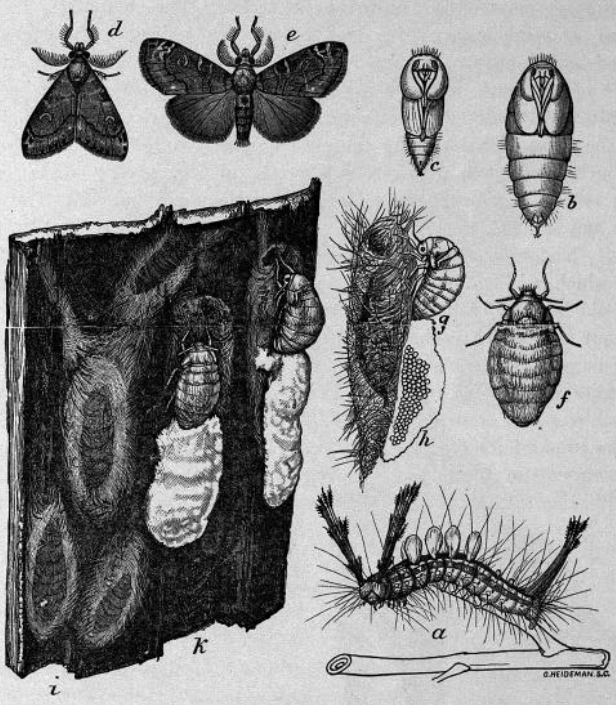
By Dr. H. T. Fernald, State Nursery Inspector.

Insects are probably the worst enemies of our trees. Over five hundred kinds attack the oaks, and every tree has its insect foes. It is important to properly protect the trees from these pests if they are to give to man the benefits desired, and to do this some knowledge of how different insects work is necessary.

There are three ways in which insects usually injure trees: by eating the leaves, and so checking growth or even killing the tree; by boring in the trunk or branches; or by sucking the sap. No insect does injury during its entire life, and it is usually actually injurious only in one or two stages of its existence. Thus the tussock moths and canker worms are really harmful only while caterpillars, but should be destroyed whenever they can be found, to reduce the damage which they would cause in later stages.

If it were not so frequently shown that many people do not know the

connection between the different steps in the life of an insect, it would seem a waste of space to say that insects come from eggs, laid either separately or in clusters; that these eggs hatch into maggots, grubs, borers or caterpillars, as the case may be, and that these do most or all of the injury. In any case the grub, caterpillar, or whatever it may be called, feeds until it is full grown, then usually spins a case around itself, called a cocoon, and inside this it changes its structure. It may be that the next stage is to be a fly, in which



THE WHITE-MARKED TUSSOCK MOTH: *a*, caterpillar; *b*, female pupa; *c*, male pupa; *d*, male moth; *e*, same, wings spread; *f*, female moth; *g*, same on cocoon with eggs in froth at *h*; *i*, cocoons on tree trunk; *k*, same, showing females and egg masses; all slightly enlarged. (United States Department of Agriculture, Yearbook, 1895.)

case the maggot structure is torn down and the fly structure is constructed from the ruins; if a caterpillar is being considered, we find that inside the cocoon the structures of the caterpillar are built over to form those of a butterfly or moth. In any case, however, when this rebuilding has been finished, the fly, moth or butterfly — in other words, the adult insect, whatever it may be — escapes from the covering inside which this rebuilding took place, and lays the eggs for another brood.

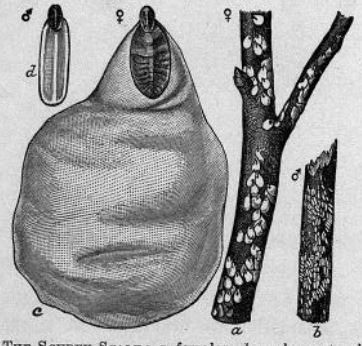
Insects increase in numbers so rapidly that the descendants of a single individual often number thousands or even millions in a single year, and it is necessary to watch our trees closely, if they are to be protected. Too often "the stable door is locked after the horse is stolen," and it is too late to save

the life of the tree. An examination of it should therefore be made at the time it is set out, as without any insect enemies the tree will have a hard time during the next few months before it has fully established itself, and the presence or absence of insects during that time may determine whether the tree will live or not.

Some of the insects likely to be found on shade trees set out in the spring months are described here, as they should be looked for and removed.

A grayish mass of interwoven hairs and silk may sometimes be seen on the trunk or some branch of a tree, often with a dead leaf fastened to it. Any dead leaf should be examined then, to see what holds it to the tree. On one part of the mass of hairs a cluster of tiny whitish eggs, or perhaps a little white hard froth, may be found. This is the work of one of the tussock moths, the mass of hairs being the empty cocoon, and the eggs those of the moth which came from that cocoon. One kind of tussock moth after laying its eggs on the outside of its cocoon covers them with a white froth, which hardens and conceals the eggs from view; but if the froth be broken, the eggs may easily be found. Later in the season the eggs will hatch into tiny caterpillars, which will go to different parts of the tree and feed on the leaves. They could be killed then by spraying the tree with arsenate of lead or Paris green; but it is much easier to get them all while they are still in the egg, and can be picked off by a single motion of the hand, to be burned.

Canker worm eggs are found in tiny clusters on the bark of the trunk or branches, often close to where one branch joins a larger one. They are about the color of the bark, and are easily overlooked; but if when the tree is set out every little roughness and irregularity of the bark is scratched, insect eggs will come off, while natural growths will remain. If the canker worms are on older trees near by they may be kept off the young ones, unless these are partly beneath the others, by putting a band of soft, fluffy cotton around the trunk, three or four feet from the ground, and keeping this loose so as to entangle the canker worms, which are obliged to crawl onto the tree, and prevent their getting up to the leaves. On older trees with thicker bark Tree Tanglefoot can safely be used as a band in a similar way, and is more satisfactory.



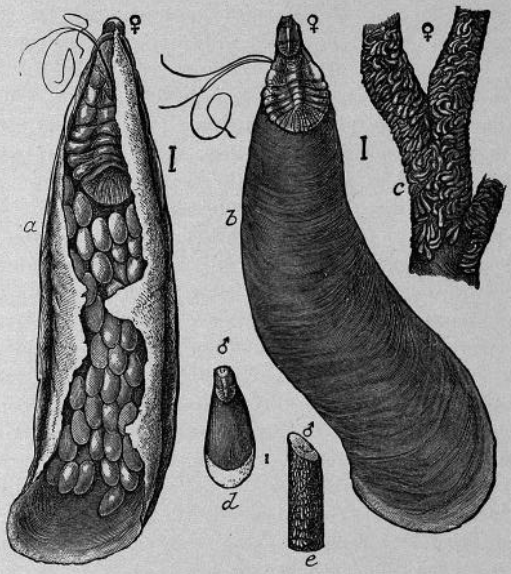
THE SCURFY SCALE: *a*, females; *b*, males, natural size, on twigs; *c*, female scale, much enlarged; *d*, male scale, much enlarged. (United States Department of Agriculture, Yearbook, 1894.)

A group of insects the importance of which has been little appreciated till recently is known as the scales. These are mostly small insects, covered by a scale or shell which fits closely against the bark, and under this protection the insect lies, sucking the sap from the tree through a long tubular beak which it thrusts through the bark.

These insects after once settling down on a place while young remain there during the rest of their lives.

The most dangerous scale in Massachusetts is the San José scale, but fortunately this pest is of little importance on most shade trees, though it can live on the majority of them, being very serious in this State only on fruit trees, mountain ash, poplars, willows, ornamental plums and thorns, and on such ornamental bushes as the dogwoods, ornamental currants, lilacs and a few others.

This scale is very small, being about the size of a pin head, circular in outline, and when present in large numbers gives the bark a gray color. If it is suspected that this or some other scale is present, scratch the bark with a finger nail, and any scales present will be removed, the crushing of their bodies often moistening the finger as well.



THE OYSTER-SHELL SCALE: *a*, under side of female scale, showing eggs; *b*, upper side of same, both much enlarged; *c*, female scales on a twig, natural size; *d*, male scale, much enlarged; *e*, male scales on a twig, natural size. (United States Department of Agriculture, Yearbook, 1894.)

Far more common on shade trees are the oyster-shell scale and the scurfy scale and near relatives, which are larger, oval or quite long and narrow in form, and brown, gray or dirty white in color. Trees growing in the woods at some distance from settlements are often badly infested with these scales, and any tree which by the finger-nail test already mentioned appears much infested by scale insects should not be selected for planting. In case trees already set become infested, a thorough drenching about the first of June and again ten days or two weeks later with a pound of whale-oil soap dissolved in four or five gallons of water will usually kill enough of the scales to save the tree or shrub; but this treatment will probably need to be repeated each year.

If a similar scale is noticed on the leaves of pines, so that when abundant the trees look as though they had been sprinkled with whitewash, the same treatment will be satisfactory, but should be applied about the 20th of May and also about the 10th of September.

Sometimes on the maples, oaks, the tulip tree and other kinds of trees brownish lumps may be noticed on the twigs, differing in size in some cases. If these lumps can be scratched off, they are probably scale insects, but of a different kind from those just considered, having no distinct scale covering them, but only a hardened outer surface of the body. These scales are generally spoken of as Lecaniums. They may be exceedingly abundant at times, and affect the trees they are on quite severely, but are rarely serious for more than a year or two before their natural enemies bring them under control; and therefore under ordinary conditions may in most cases be ignored, as the treatment varies much according to the kind of Lecanium concerned in each case.

Borers are among the most difficult insects to control. Their protected lives make it hard to reach them, and the only treatments of much use are to watch for borings and "sawdust" from their work, and then cut them out, or spike them on a pointed wire run into the tunnel. In some cases the adults may be kept away from the trees, so that no eggs will be laid on the bark, by keeping such parts of the tree covered with soap; but so many of our borers lay their eggs on the higher limbs that this is not very successful. There is no excuse, however, for setting out trees already infested with borers.

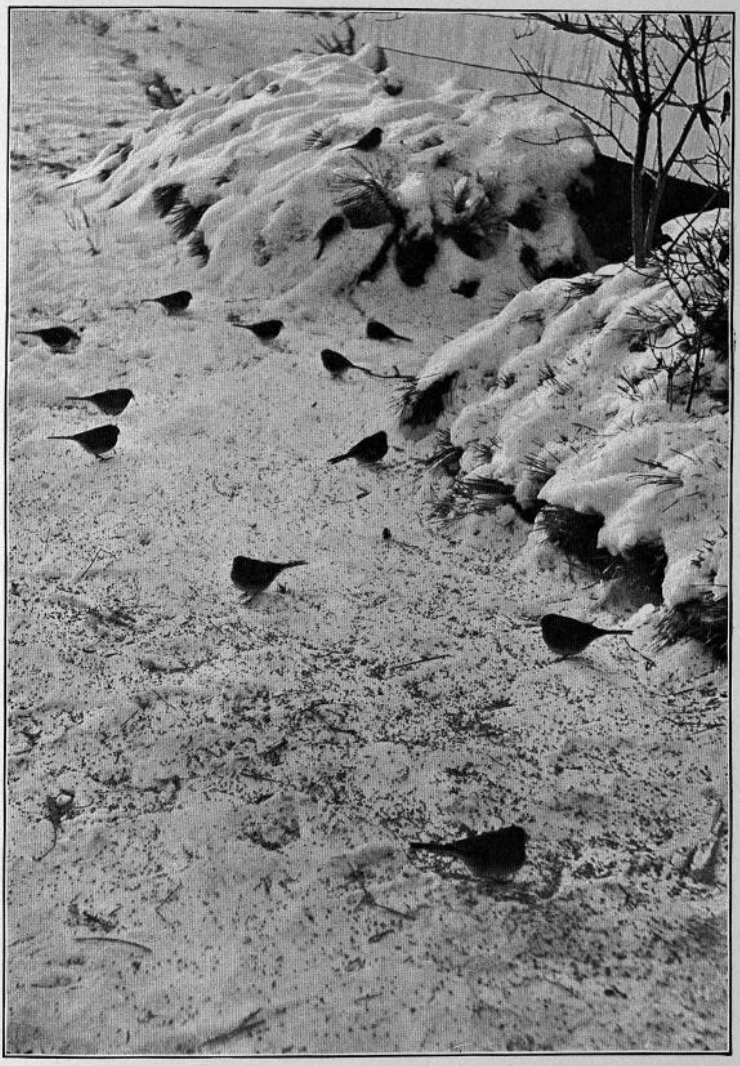
In eastern Massachusetts two insects are of particular importance. The gypsy and brown-tail moths must be carefully watched for, and the yellow egg masses of the former on the trunks and limbs, and the winter tents of the latter on the tips of the twigs, must all have been removed long before Arbor Day, if any hope of raising shade trees in the region is cherished.

Arbor Day is of little value if its spirit ends with the day itself. It is worth little to plant a tree and then neglect it, and any one who would conduct a business on such a principle would soon find himself insolvent. The principle and practice of Arbor Day should be: plant trees; watch the trees; protect the trees; and thus get the fullest benefit from the trees.

WHY CHILDREN SHOULD BE FRIENDS OF THE BIRDS.

By Edward Howe Forbush, Ornithologist to the Board.

Children should befriend the birds, because it is "more blessed to give than to receive." Children should be taught to feed birds in winter; to put up bird houses and boxes, in which birds can nest and find shelter; and to plant trees, shrubs and vines, which furnish food for birds, — because such humane and kindly acts tend to develop the child into a more unselfish, kind



A Bountiful Repast. Juncos and a Tree Sparrow. (From "Useful Birds and their Protection," Forbush.)

and useful man or woman. Children who begin by being kind and humane to the lower animals rarely become criminals. Crime decreases wherever the protection of the weak and the helpless is taught and practiced.

Children should seek to protect and shelter birds, because it is best for the welfare of the community and the race to have an increased number of those birds that destroy the pests of the farm, orchard and garden.

Children should be taught to attract birds about the farm and home, for by so doing they will secure a small army of helpers in field, orchard and garden, — helpers that will destroy our insect foes, and so save fruit, flower and leaf from destruction.

Children may attract birds in winter by hanging out uncleaned bones and pieces of meat on the trees, and by scattering chaff and barn sweepings on the snow. They will thus entice about the farm and dooryard those species that feed on the insect enemies of trees and those that destroy the weed seeds in the garden, and so get much help from the birds in return for a little help given them. This is a good business investment. This is but an economic and selfish reason why children should befriend the birds; nevertheless, it is one well worth considering, for without birds the world might become either a barren waste, unfit for human habitation, or a sphere infested with recurrent plagues, famines and pestilences.

Birds not only help us by eating the superabundance of the insects that infest our trees, shrubbery, vegetables, grasses and grains, but they also destroy large numbers of other animals that if left to increase unchecked might soon become destructive pests or serious nuisances. Birds kill and eat the surplus field mice, shrews, squirrels, hares, skunks, weasels, frogs, toads, lizards, spiders and other creatures. Were the birds destroyed, these creatures as well as insects would increase greatly in numbers, and make war upon each other. In northern Europe, where the hawks and owls have been much reduced in numbers by farmers and game keepers, great hordes of field mice have destroyed the grass on thousands of acres of meadow and pasture land.

Professor Herrick tells us in "Bird-Lore" that in a part of Italy where the people have destroyed most of the birds that formerly nested there the land is now infested with lizards. He has seen on a tract of ground one lizard for each square foot. These lizards feed mainly on insects, and so when the birds had been destroyed the lizards in a measure took the place of the birds. But even in Italy only a part of the birds have been killed, and many migratory birds still pass through the country in fall and spring, feeding on insects as they go.

Let us imagine what would probably happen in our own country were the people to kill all the birds. Insects increase so rapidly that were they unchecked by birds we might expect a great plague of caterpillars, beetles, bugs and other injurious insects. Undoubtedly the leaves on the trees, the vegetables in the gardens and the grain in the fields would then be nearly all destroyed by insects, and sooner or later cattle, horses and other domestic animals, as well as we ourselves, would be threatened by starvation.

The increase of injurious insects would be followed by an irruption of the insects that feed upon them, and the air would be filled with ichneumon flies and gnatlike parasitic insects. The ground would be fairly carpeted with

predaceous beetles, bugs and spiders. Every tree and bush would swarm with them, and all vegetation would be enmeshed in spiders' webs.

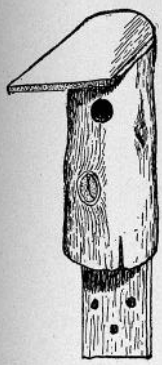
The plague of insects would also bring on an increase of frogs, toads and bats, as they feed largely upon insects; and, to crown all, would come an army of snakes, which, taking the place of the birds in a measure, would feed upon all. The struggle between the snakes and the toads, frogs, mice, squirrels and other small animals would probably result in a victory for the snakes. The few people that were able to survive famine, plague and pestilence would then be reduced to living on snakes, and would find the world peopled with snakes, bats and spiders, in place of beautiful and tuneful birds, and life would become a burden to the inhabitants of a desolate world.

In just so far as we fail to care for and protect the birds, just so far we shall suffer for this neglect.

Children should value the birds also as objects of study and observation. As Dr. Coues says, there is no more fascinating page of nature than that on which is written the life history of a bird. What is more delightful than to watch the nest-building and the rearing of the young of these elusive, usually timid, but at times bold and familiar, sprites.

The weaving of the nest, hidden away amid the grasses and flowers of the field, hung pendant among the rustling foliage of a wind-swung bough, or nestled in the fork of some dark pine, spruce or hemlock; the little mother, warming the tiny eggs beneath her tender breast; the feeding and growth of the comical, blind, naked, helpless young, which in a few short days or weeks grow lusty, strong and pinioned for flight; the assiduous care of the parents, who bravely risk their lives in defence of their helpless young, — all present attractive opportunities for that close and familiar study of habits and life interrelations to which students of nature are now turning. The observational faculties of the child may be developed by distinguishing the songs and notes of birds, the varying flight of different species, and the marks, colors and other characters by which they may be recognized. A loving appreciation and enjoyment of the songs, beauty, vivacity, graceful forms and movement of birds help to uplift our lives and make them better worth living. In their tenderness towards their mates and their devotion to their young, these "little brothers of the air" teach us a lesson of fidelity which all may emulate. We may well strive to equal their industry and perseverance, and their courage and cheerfulness in adversity.

Though the night storm be black and wild, the sunlight breaking through the dark mists of morning is ever greeted by the joyous carols of happy birds. The tinkle of bird songs, which thus foretells both the dissolution of the storm clouds and the reappearance of the life-giving sun, brings hope and cheer to the way-worn, storm-beaten traveler. It bids him take up again the journey of life with renewed courage and high resolves, that it may end in the fulfillment of his highest destiny.



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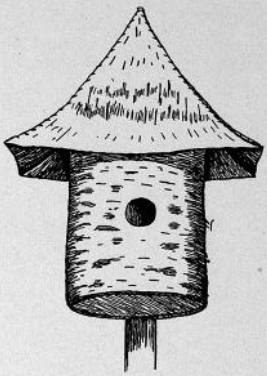

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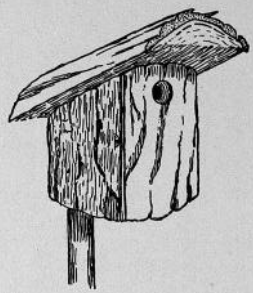

Fig. 3.

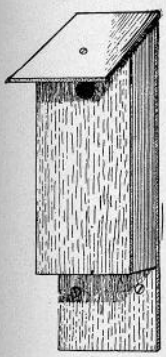

Fig. 4.

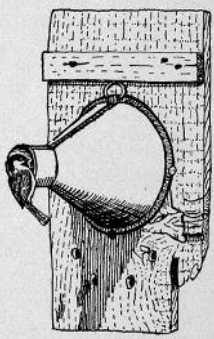

Fig. 5.

Fig. 6.

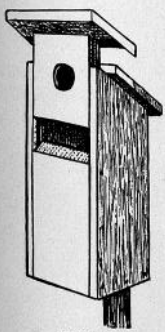

Fig. 7.

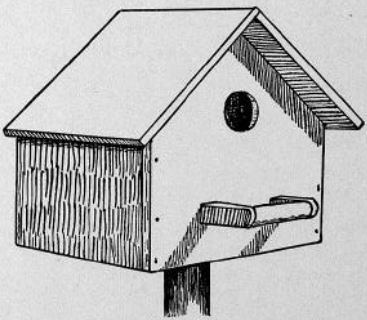

Fig. 8.

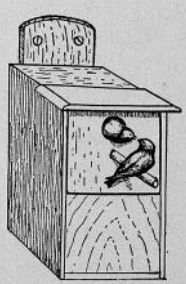

Fig. 9.

Bird Houses and Nesting Boxes. (From "Useful Birds and their Protection," Forbush.)

INFORMATION — SELECTIONS — SUGGESTIONS.

By Forestry Department, State Federation of Women's Clubs. Compiled by Mrs. Ada M. Stiles and Mrs. Henrietta W. R. Frost.

TREES.

A Song of the Woods.

Oh, give me the wild woods,
For comfort and for store,
For joy of life that lingers
When youthful zest is o'er;

The free woods, the free hills,
The blue of lake and sky, —
The country of God's children
When they to Him are nigh!

The woods are utter silence,
The woods, they have no end!
Your campfire is your homestead,
And starry night your friend.

The wild has ne'er a city,
And ne'er a state or town.
Sleep in God's tent, and welcome;
He never takes it down.

— James Buckham.

The Need for the Forestry Movement.

I have slept under pine trees, which were tall, straight, beautiful pine trees when North America was discovered. I went up through the same region two years ago with a friend, and found my pine trees all gone, and sumac and blackberry bushes in their places. It makes a man cry to see it. — Rev. Edward Everett Hale, chaplain of the United States Senate, at American Forest Congress, 1905.

The Wayside Inn.

I halted at a pleasant inn,
As I my way was wending;
A golden apple was the sign,
From knotty bough depending.

Mine host, — it was an apple tree, —
He smilingly received me,
And spread his sweetest, choicest fruit
To strengthen and relieve me.

Full many a little feathered guest
Came through his branches springing;
They hopped and flew from spray to spray,
Their notes of gladness singing.

Beneath his shade I laid me down,
And slumber sweet possessed me;
The soft wind blowing through the leaves
With whispers low caressed me.

And when I rose and would have paid
My host, so open-hearted,
He only shook his lofty head, —
I blessed him and departed.

— A. H. T. From the German of Uhland.

The Hard Maple.

The maples are a noble family, citizens of many nations, denizens of many climes, always and everywhere clothed with more than queenly grace and beauty. Fifty members maintain the stainless purity of the family name and uphold its pristine glory. Ten of them are our fellow citizens, and hold honored places in each one of our great sisterhood of States. Long ago the birds chose the maple as queen of the forest. On its pliant branches they sing their sweetest songs. Amid its silvery leaves they tell the story of their loves and seal their plighted faith. Lady bird makes her secret bower amidst its branches, and the queenly maple draws her green curtains so closely about the nestlings that the sharp-eyed squirrel cannot find them. — C. A. Hutchins.

Pine Trees.

The pine is trained to need nothing and to endure everything. Tall or short, it will be straight. Small or large, it will be round. It may be permitted to the soft lowland trees that they should make themselves gay with the show of

blossom and glad with the pretty charities of fruitfulness. We builders with the sword have harder work to do for man, and must do it in close-set troops.

To stay the sliding of the mountain snows, which would bury him; to hold in divided drops, at our sword points, the rain, which would sweep away him and his treasure fields; to nurse in shade among our brown, fallen leaves the tricklings that feed the brooks in drought; to give massive shield against the winter wind, which shrieks through the bare branches of the plain, — such service must we do him steadfastly while we live.

Our bodies also are at his service, — softer than the bodies of other trees, though our service is harder than theirs. Let him take them as he pleases for his houses and ships. So also it may be well for these timid, lowland trees to tremble with all their leaves, or turn their paleness to the sky, if but a rush of rain passes by them; or to let fall their leaves at last, sick and sere. But we pines must live amidst the wrath of clouds. We only wave our branches to and fro when the storm pleads with us, as men toss their arms in a dream. — JOHN RUSKIN.

Thou tall, majestic monarch of the wood,
That standest where no wild vines dare to creep, —
Men call thee old, and say that thou hast stood
A century upon my rugged steep;
Yet unto me thy life is but a day,
When I recall the things that I have seen, —
The mountain monarchs that have passed away
Upon the spot where first I saw thy green;
For I am older than the age of man,
Of all the living things that crawl or creep,
Or birds of air, or creatures of the deep;
I was the first dim outline of God's plan.
Only the waters of the restless sea
And the infinite stars in heaven are old to me.

ALONE IN THE WOODS.

Here in the leafy forest, where the trees
Are rugged with old age, I spend the day;
And I am happy here, for here I may
Be undisturbed by mortals. Scenes like these
Are beautiful indeed; and he who sees
No charms in this green woodland, far away
From haunts of men, has surely gone astray
From nature and from God. All things that please
The senses in these forest glades I find:
Fair tints that cheer the eye, and soft caress
Of woodland breeze, and sound of woodland kind,
And sweet companionship that soothes the mind
As nothing else can soothe; and here I dream
The hours away, in peace and happiness.
— OSCAR JOHNSON, in "National Magazine."

THE LIFT OF THE HEART.

When we stand with the woods around us,
And the great boughs overhead;
When the wind blows cool on our forehead,
And the breath of the pine is shed;
When the song of the thrush is ringing,
Wonderful, rich, apart, —
Between the sound and the silence
Comes a sudden lift of the heart.
— ELIZ. KEMPER ADAMS.

A small ship launched upon an unknown sea,
A small seed planted from an unknown tree, —
Such is this strange New Year to you and me.
Whither the vessel goeth,
And how the seed upgroweth,
God only knoweth.
But sail the ship and plant the seed;
What's done in faith is done in deed.
— W. K. W.

If Canada can afford to take the magnificent and enormous Temagami region for a national reserve forever, surely the United States can afford to acquire the small tract around the Presidential range in New Hampshire. Think it over, solons.

The Trees.

Time is never wasted listening to the trees;
If to heaven as grandly we arose as these,
Holding toward each other half their kindly grace,
Haply we were worthier of our human place.

Bending down to meet you on the hillside path,
Birch and oak and maple each his welcome hath;
Each his own fine cadence, his familiar word,
By the ear accustomed, always plainly heard.

Every tree gives answer to some different mood;
This one helps you, climbing; that for rest is good;
Beckoning friends, companions, sentinels they are;
Good to live and die with, good to greet afar.

O ye glorious creatures, heirs with us of earth!
Might we win the secret of our loftier birth, —
From our depths of being grow like you and climb
To our heights of blessing, — life would be sublime!

— Lucy Larcom.

Leaves.

Summer is past for the little leaves,
So the wind by night and day
Gathers them close, while he sighs and grieves,
And carries them all away.

Leaves that are yellow as beaten gold,
Leaves of passionate red,
Leaves that are broken and brown and old,
Leaves that are withered and dead.

Some he will blow to the sad sea waves,
And in the ebb and the flow
They will reach the green, forgotten graves
Of the drowned that lie below.

Some he will drift to the place of sleep, —
The great brown mother of rest;
And to slumbers, dreamless, sweet and deep,
She will hush them at her breast.

For the fleeting days of blue and gold
They will fret no more, or sigh;
They will not know it grows dark and cold,
Or stir when the rain sweeps by.

And none shall unfold the mystery
Of the things that come and go,
Save only He who holdeth the sea,
And maketh the winds to blow.

— Virna Sheard, in "New England Magazine."

The woods were made for the hunters of dreams,
The streams for the fishers of song,
To those who hunt for the gunless game
The streams and woods belong.

There are thoughts that moan from the soul of the pine,
And thoughts in the flower bell curled;
And thoughts that are blown with the scent of the fern,
As new and as old as the world.

— Foss.

Wonderland without a Gun.

Won't you tell your boys that the forest is a wonderland if visited without a gun? A camera is a revelator. Tell the boys that most of our trees are planted and protected by squirrels and birds. The little gray squirrel is the chief forester and nurseryman of all the western pineries. This little squirrel is being killed by the thousands; and so, too, are the hawks and owls who are striving day and night to prevent the rats and rabbits from killing the baby trees; and the woodpeckers, nuthatches and the dear little chickadees, who are as busy as can be trying to prevent caterpillars, insects and borers from destroying the trees. Above all, tell the boys to put out their camp fires, or from them the woods may take fire, and all the trees, squirrels and birds be burned.

A Tragedy of the Woods.

From a few hundred feet away there is a fierce crackling, like the volley firing of rifles. The fibers of the giant are being torn asunder. A mighty green crest, more than two hundred feet in

the air, begins to sway ever so slightly, as if moved by a big wind. Then comes a long-drawn, rending crash, gathering volume as the heart of the tree is ripped in twain. Now the top of the tree, far up in the bright sunlight, begins to move toward the earth, very slowly. It seems a long time before it gathers headway and begins to crash in a sweeping arc down among the trees around and beneath it. The air is full of torn branches and fragments of the smaller trees which are in the shattering path of this fall. So fast is the flight of this tree as its mass picks up momentum that the wind wails through its top, and the sound of it can be heard afar. There is a vast, solemn, groaning sound, and then with the noise of thunder the tree smites the ground, and the earth trembles. — RALPH D. PAINE. "The Builders," in "The Outlook."

THE VANDALS.

Down beyond the garden wall
  They have cut down the maple tree;
But they who cut it cannot know
  The loss to you and me.

They think to build themselves a house
  Where our tree house has stood, —
Our tree, that was a house of leaves
  Fairer than house of wood.

Will they see the wondrous sights we saw,
  From their windows made of glass, —
The wingèd clouds, the marching sun,
  The shadow ships that pass?

We saw the spring come up the land,
  The autumn's flags flung out;
We felt the south wind kiss our hair,
  And answered the west wind's shout.

The house of wood will higher be
  Than our tree house in the air;
Yet they will not live so near the sky,
  Nor see what we saw there!
— LUCY L. CABLE, in "St. Nicholas."

Whenever a man questions the beauty or usefulness of a tree, I always look beneath his hat to see the length of his ears. — BEECHER.

Mr. Thos. Pierce of Topsfield claims that 6,000 species of trees can be grown in this climate successfully. More than 3,000 are already growing on his farm.

We love natural beauty, yet we have recklessly destroyed our forests, and, with few exceptions, have failed to preserve the single growth which would have been fitter monuments of the history of our cities and towns than the noblest of architecture, or the most elaborate sculpture.

Charter oak, — estimated to be two thousand years old.

There is something noble, simple and pure in a taste for trees. It argues, I think, a sweet and generous nature to have this strong relish for beauties of vegetation and this friendship for the glories of the forests.

There is a grandeur of thought connected with this part of rural economy. He who plants an oak looks forward to future ages, and plants for posterity. Nothing can be less selfish than this. He cannot expect to sit in its shade or enjoy its shelter, but he exults in the idea that the acorn which he has buried in the earth shall grow up into a lofty pile, and shall keep flourishing and increasing and benefiting mankind long after he shall have ceased to tread his paternal fields. — WASHINGTON IRVING.

SHADE TREES AND HEALTH.

Tree felling has turned 5,000,000 square miles of fertile lands into deserts, and made one-third of the eastern continent unfit for humanity.

Spain, with her ancient woodlands, was once the Eden of southern Europe; now, "treeless Spain" generates poverty and disease.

Forest-shaded Sicily begat athletes and philosophers; now, its sun-blistered condition makes bandits, beggars and vermin.

The entire coast of the Mediterraneau

has been cleared, and with it four-fifths of the former population and nine-tenths of its former productiveness. So, also, southern France, Portugal, Persia, Hindoostan, Armenia, Asia Minor.

Forests attract rainfalls. The tree plantations in upper Egypt increase rainfalls in a year from 9 to 15 inches.

Forests shelter birds which destroy insects.

Leaves generate oxygen and absorb noxious gases. In warm climates, shaded streets prevent sunstroke.

Malaria follows forest destruction; fevers thrive every summer from deposited mud banks washed down from treeless heights.

Shade trees about a dwelling are as important as good plumbing. A house in a grove is worth double a house on a naked hillside. Consider the longevity of our "backwoodsmen" and foresters. — F. L. OSWALD, M.D.

WHAT THE BIBLE SAYS.

And God said let the earth bring forth the fruit tree yielding fruit after his kind; and the earth brought forth the tree yielding fruit; and God saw that it was good.

The tree of the field is man's life. Then shall the trees of the wood sing out of the presence of the Lord; then shall all the trees of the wood rejoice before the Lord. The trees of the Lord are full of sap, the cedars of Lebanon, which he hath planted, where the birds make their nests; as for the stork, the fir trees are her house.

Blessed is the man whose delight is in the law of the Lord; he shall be like a tree planted by the rivers of water that bringeth forth his fruit in his season; his leaf also shall not wither; and whatsoever he doeth shall prosper.

Of Wisdom, the wise man saith: "She is a tree of life to them that lay hold upon her, and happy is every one that retaineth her." And again, "The fruit of the righteous is a tree of life. Hope deferred maketh the heart sick, but when the desire cometh it is a tree of life; and a wholesome tongue is a tree of life."

And the angel carried me away in the spirit, and showed me that great city, the holy Jerusalem; in the midst of the street of it, and on either side of the river was there the tree of life, which bare twelve manner of fruits, and yielded her fruit every month; and the leaves of the tree were for the healing of the nations. And he said: "To him that overcometh, will I give to eat of the tree of life which is in the midst of the Paradise of God."

God planted a garden eastward in Eden; and there he put the man whom he had formed. And out of the ground made the Lord God to grow every tree that is pleasant to the sight and good for food. — GEN. II: 8–9.

The Creator must have considered the trees His most perfect work in nature, they are so many times spoken of in the Bible.

FORESTRY.

In the distant lowlands (of the southern Appalachians), through which the waters pass on their way to the ocean, the effects of the deforestation are felt in floods, which sweep out bridges, dams and houses, and often spread barren sand over many acres of fertile fields. From April, 1901, to April, 1902, floods in the south, fed from the southern Appalachian region, did a damage estimated at $18,000,000. — United States Senate Report No. 2537, on the "Appalachian Forest Reserve," etc.

The damage due to the overflow of the Kansas or Kaw River in 1903, resulting in part from deforestation of the Kaw valley, was estimated by a forest service expert at $22,000,000.

There are parts of Asia Minor, of Northern Africa, of Greece, and even of Alpine Europe, where the operation of causes set in action by man has brought the face of the earth to a desolation

almost as complete as that of the moon; and though, within that brief space of time men call the "historical period," they are known to have been covered with luxuriant woods, verdant pastures and fertile meadows, they are now too far deteriorated to be reclaimable by man; nor can they become again fitted for human use except through great geological changes, or other mysterious influences or agencies of which we have no present knowledge, or over which we have no prospective control.

The destructive changes occasioned by the agency of man upon the flanks of the Alps, the Apennines, the Pyrenees and other mountain ranges in central and southern Europe, and the progress of physical deterioration, have become so rapid that in some localities a single generation has witnessed the beginning and the end of the melancholy revolution.

It is certain that a desolation like that which has overwhelmed many once beautiful and fertile regions of Europe awaits an important part of the territory of the United States, unless prompt measures are taken to check the action of the destructive causes already in operation. — G. P. MARSH, in "Man and Nature," p. 232.

In the home of the fir, the spruce and the cedar, the song of the ax, the saw and the hammer begins with the dawn and rests only with the close of the day. Go where you will, the crop of the centuries is being harvested. With each breath a monarch of the forest falls. Engines whistle to engines, as the huge trunks of these noble trees are dragged to the water or to the railroad; the locomotive whistles to the mill, as it comes with long trains of the wealth of our forests; and the mill whistles back to the locomotive, as its saws sing while they work; steamers for coastwise and trains for the eastern markets whistle back to the mill, as they hasten for its product; the deep-loaded ship spreads its sail, and the winds waft our lumber to the far corners of the earth. . . .

But is there no other note in the song? Do these people ever think? . . .

They are leaving nearly half of the crop in the woods to be burned, and, burning, destroy more; and for the half they are marketing they are obtaining no proper equivalent. They are leaving the ground a fire-swept, desolate waste, where fire will follow fire, until all things valuable have been destroyed. They are taking to themselves the whole of the heritage entrusted to them, and in return are not even scattering a few seeds for the benefit of their children. They are vandals, but no law can reach them. They would be adjudged insane, except for the necessity which governs. The sacred right of property is theirs, and they can do as they will with their own. — Col. GEORGE H. EMERSON, Vice-President, Northwestern Lumber Company, Washington, at American Forest Congress, 1905.

ACTION OF PRESIDENT ROOSEVELT.

The preservation of the forests is vital to the welfare of every country. China and the Mediterranean countries offer examples of the terrible effect of deforestation. . . .

Neither State nor nation can afford to turn these mountains over to the unrestrained greed of those who would exploit them at the expense of the future. We cannot afford to wait longer before assuming control, in the interest of the public, of these forests; for if we do wait, the vested interests of private parties in them may become so strongly intrenched that it may be a most serious as well as a most expensive task to oust them. . . . All the higher Appalachians should be reserved, either by the States or by the nation. I much prefer that they should be put under national control. — President ROOSEVELT, address at Raleigh, N. C., Oct. 19, 1905, American Forestry Association.

FOREST FIRES.

A majority of fires are set by railway locomotives. Self-interest and legislation alike should dictate that all locomotives be fitted with spark-arresters. No fires occur that are not due to human agencies. There is no authentic instance of a fire started by lightning. Instances are known of the sun's rays so focussed through a bit of curved glass as to start a blaze. This is not so improbable as it sounds; two of the great Adirondack fires are said to have started this way, and it is a known fact that old settlers on the prairies decried the careless leaving of pieces of broken bottles.

It lies largely with the individual as to whether the forests of the United States are to suffer continued devastation by fire. When all take a vital interest in this matter, there will be some reduction of disaster, and the *lumber industry, fourth in the United States,* will not suffer from fires, an annual loss *greater than one-twelfth of the total annual value of all its products.*

Two boys once set a fire to find a lost cow bell that cost twenty cents. They did not find the bell, but burned up the cow, its barn, the home of the owner, and other property amounting to $20,000. — From "Fighting Forest Fires," by H. M. Suter, Editor of Forestry and Irrigation, in "The Chautauquan," December number.

FLOWERS.

To the Fringed Gentian.

Thou blossom bright with autumn dew,
And colored with the heaven's own blue,
That openest when the quiet light
Succeeds the keen and frosty night.

Thou comest not when violets lean
O'er wandering brooks and springs unseen,
Or columbines, in purple dressed,
Nod o'er the ground-bird's hidden nest.

Thou waitest late and com'st alone,
When woods are bare and birds are flown,
And frosts and shortening days portend
The aged year is near his end.

Then doth thy sweet and quiet eye
Look through its fringes to the sky,
Blue — blue — as if that sky let fall
A flower from its cerulean wall.

— William Cullen Bryant.

The National Flower.

They have asked me to vote for a national flower.
Now which will it be, I wonder?
To settle the question is out of my power;
But I'd rather not make a blunder.

And I love the mayflower best, — in May,
Smiling up from its snowdrift cover,
With its breath that is sweet as a kiss, to say
That the reign of winter is over.

And I love the golden-rod too, — for its gold;
And because through autumn it lingers,
And offers more wealth than his hands can hold
To the grasp of the poor man's fingers.

I should like to vote for them both, if I might;
But I do not feel positive whether
The flowers themselves would be neighborly quite, —
Pink and yellow don't go together.

Oh, yes, but they do! In the breezy wild rose,
The darlingest daughter of summer,
Whose heart with the sun's yellow gold overflows,
And whose blushes so well become her.

Instead of one flower, I will vote for three:
The mayflowers know that I mean them;
And the golden-rod surely my choice will be,
With the sweetbrier rose between them.

You see I'm impartial. I've no way but this:
My vote, with a rhyme and a reason,
For the mayflower, the wild rose, and the golden-rod, is —
A blossom for every season!

— Lucy Larcom.

I would reverently add to the list of the beatitudes this, "Blessed are those who help us to see."

There are flowrets down in the valley low,
  And over the mountain side,
That were never praised by human voice
  Nor by human eye descried;
But sweet as the breath of a royal rose
  Is the perfume they exhale;
And where they blow and why they blow
  The good Lord knoweth well.

At the county jail at Fitchburg for many years existed a garden laid out by the warden's wife, believing that the work by the convicted prisoners among the flowers would have a softening influence upon them.

The Pitcher Plant.

Dick, the child of a tenement house, came softly tiptoeing into the public library, and caught his breath at the lovely vision.

His home was in a couple of rooms, up rickety stairs, under a flat roof. One room had one window, the other was a dark closet, and here father, mother and three children lived.

That day Dick entered the children's room of the library for the first time. Here was a beautiful picture of a horse's head; there, one of a child and dogs, — happy playmates together. Vases of wild flowers told the story of the woodland, and a pitcher plant stood in its own ball of earth, right from the swamp, its leaves, with the hood and side wings, making quaint little pitchers.

That night when Dick crept back to his miserable home he found his father just rousing from a heavy, stupid sleep, and going out for more liquor.

"Wait, oh, wait, father, and let me tell you what I saw to-day."

The father halted, partly because he was not quite ready to stir, and partly to please the boy, for he was really kind at heart. So Dick told what he had seen, but his father paid little heed until he came to the pitcher plant.

Then the man bowed his head, and seemed to see again his boyhood's home and the place where the pitcher plants grow, and in thought again he unfolded their curious cups and made believe to drink the water they held.

There came the vision of his mother singing as she worked: —

Love of God, so strong and changeless;
Love of Christ, so full and free;
Even me, even me.

He lifted his head, exclaiming: "I will never drink anything stronger than what the pitcher plant holds, and we will live in the country."

He was a skilled workman, and when he let liquor alone could earn enough to make them comfortable. The poor, discouraged mother began to take heart again.

One day Dick saw in an office waste basket a catalogue of "Abandoned Farms," and took it home to his father. After some writing back and forth, it was decided that he could have a farm free for the first year, if he would make certain repairs. Now the way was clear, and the money saved bought a cow; an overworked express horse was bought from its cruel owner, and took on a new lease of life; and a dozen hens completed the first purchases.

It is a year since the family took possession. The little place is like a garden for thrift and neatness. Dick's mother is the best of housekeepers, and Dick and his father are hard workers; early and late they toil, and for sweet reward.

Little by little they have increased their stock. Dick has a market wagon, and twice a week drives eight miles to town with a load of choice vegetables and poultry, reaching home tired but happy.

And the chief flower that they have in their garden is the pitcher plant, transplanted from the swamps.

Queen Alexandra's knowledge of the flora of her native land is extensive, says "Home Notes," and she has a dinner service each plate and dish of which represents a Danish flower. Whenever

a new flower is discovered, another piece is added to the service.

If I had two loaves of bread, I would sell one and buy hyacinths, for they would feed my soul. — KORAN.

BROOKS AND RIVERS.

THE BROOK IN WINTER.

A snowy path for squirrel and fox,
It winds between the wintry firs;
Snow-muffled are its iron rocks,
And o'er its stillness nothing stirs.

But low, bend low a listening ear;
Beneath the mask of moveless white
A babbling whisper you shall hear,
Of birds and blossoms, leaves and light.

— CHARLES G. D. ROBERTS.

YOUNG SUMMER.

Hills after hills,
A sea of billows,
And everywhere a brook
With feathery willows.

Fern-scented woods
In every glade,
Where ghostly silver birches
Haunt the shade.

Fringing the roads,
The happy summer flowers
While lazily away
The sunny hours.

At hide-and-seek
Among the maple trees
The sun in varied mood
Plays through the leaves.

Wide pastures bare,
With lichen-covered rocks;
Above, the mackerel clouds
In little flocks.

A far cascade,
A bridal veil of white,
Greets with its murmurings
The coming night.

— MARIA K. LAMB.

THE BROOK.

I chatter, chatter, as I flow
To join the brimming river;
For men may come and men may go,
But I go on for ever.

I wind about, and in and out,
With here a blossom sailing,
And here and there a lusty trout,
And here and there a grayling.

I steal by lawns and grassy plots,
I slide by hazel covers;
I move the sweet forget-me-nots
That grow for happy lovers.

I slip, I slide, I gloom, I glance,
Among my skimming swallows;
I make the netted sunbeam dance
Against my sandy shallows.

I murmur under moon and stars
In brambly wildernesses;
I linger by my shingly bars;
I loiter round my cresses.

And out again I curve and flow
To join the brimming river;
For men may come and men may go,
But I go on for ever.

— ALFRED TENNYSON.

From that lone lake, the sweetest of the chain
That links the mountain to the mighty main,
Fresh from the rock and swelling by the tree,
Rushing to meet and dare and brave the sea, —
Fair, noble, glorious river, in thy wave
The sunniest slopes and sweetest pastures lave;
The mountain torrent with its wintry roar
Springs from its home and leaps upon thy shore.

— EDWIN M. BACON.

The hills are dearest which our childish feet
Have climbed the earliest; and the streams most sweet
Are ever those at which our young lips drank,
Stooped to their waters o'er the grassy bank.

— WHITTIER.

THE BROOK.

Dear playmate of my childhood hours,
My comrade yet thou art;
Each changing mood of thy sweet life
Is mirrored in my heart.

For oh, my lips are never still
When April days are here;
And thou among the laurelled ways
Art singing bright and clear.

Thy summer song, subdued and soft,
Invites my soul to dream
The quiet afternoons away
Beside thy leafy stream.

And still when autumn days have come
My heart is on the wing;
For every leaf upon thy breast
Is presage of the spring.

Nor doth the winter's darkened sky
My happiness destroy;
Still thou art singing low and clear
Thy deathless song of joy.

— GEORGE W. VANDEGRIFT, in "Outdoors Magazine."

SEASONS.

A HINT OF SPRING.

There's a lazy time a-comin'
And it's comin' purty soon;
It'll git a start in April
And'll keep it up through June.

The sun'll come a-streakin'
Crosst the valleys and the hills,
With its warmin' light a-drivin'
Out the shivers and the chills.

It'll loaf around the gardens
And'll roost among the trees,
A-coaxin' and persuadin'
With a mighty power to please;

Till the earth will be in color,
With the roses all in bloom
And the trees in leaf, and nater
Injoyin' of the boom.

It'll ketch a feller workin'
In the house er out of doors,
And'll start the tired feelin'
Oozin' out of all his pores.

It'll make his eyelids heavy,
It'll set his brain on dreams
Of the cool and shady places
By the quiet runnin' streams.

Then's the time to go a-fishin',
For the lazy time is best,
'Cause a fish ain't hardly human,
And it never wants to rest.

By the ripplin' of the waters,
Makin' music all the day,
He can stretch out where it's shady,
And jest fish his life away.

It's the sunshine time, the fishin' time,
The lazy time, that's best,
When a feller don't want nothin'
But to soak his soul in rest.

— WILLIAM J. LAMPTON.

NOVEMBER.

Talk not of sad November, when a day
Of warm, glad sunshine fills the sky of noon,
And a wind borrowed from some morn of June
Stirs the brown grasses and the leafless spray!

O gracious beauty, ever new and old!
O sights and sounds of nature, doubly dear
When the low sunshine warms the closing year
Of snow-blown fields and waves of Arctic cold!

Close to my heart I fold each loving thing
The sweet day yields, and, not disconsolate,
With the calm patience of the woods I wait
For leaf and blossom when God gives us spring.

— WHITTIER.

A DAY IN JUNE.

No price is set on the lavish summer;
June may be had by the poorest comer.
And what is so rare as a day in June?
Then, if ever, come perfect days;
The Heaven tries the earth if it be in tune,
And over it softly her warm ear lays.
Whether we look, or whether we listen,
We hear life murmur, or see it glisten.
Every clod feels a stir of might,
An instinct within it that reaches and towers,
And, groping blindly above it for light,
Climbs to a soul in grass and flowers.
The flush of life may well be seen
Thrilling back over hills and valleys;
The cowslip startles in meadows green,
The buttercup catches the sun in its chalice,
And there's never a leaf nor a blade too mean

To be some happy creature's palace;
The little bird sits at his door in the sun,
Atilt like a blossom among the leaves,
And lets his illumined being o'errun
With the deluge of summer it receives.
— Vision of Sir Launfal. Lowell.

The Quiet Winter Fields.

Sweet are the winter fields, —
The quiet winter fields of brown and gray
And white, and tawny yellow like the manes
Of Asiatic lions; lonely plains
Of pleasing desolation, whence the yields
Of sumptuous summer have been borne away;
Long-silent lands, — haunts of the wandering air
Which breathes out, sighing, from the woodlands bare;
How sad, how sweet, are they!
— Robert Burns Wilson, in "The Outlook."

In June.

A quiet hour beneath the trees;
A little, whispering, lazy breeze;
A perfect sky,
Where, now and then, an idle cloud
Strayed from its mates to wander by,
And near the border of the wood
A thrush that sang, serene and strong,
The flute notes of the perfect song
We almost understood;
Then eventide — and in the light
The mystery that preludes the night.
— Matilda Hughes.

October turned my maple's leaves to gold, —
The most are gone now; here and there one lingers;
Soon these will slip from out the twigs' weak hold,
Like coins between a dying miser's fingers.
— T. B. Aldrich.

O March, we know thou art
Kind-hearted, spite of ugly looks and threats,
And, out of sight, art nursing April's violets.

Come up, April, through the valley,
In your robes of beauty drest;
Come and wake your flowery children
From their wintry beds of rest.
— Phœbe Carey.

BIRDS.

The Purple Finch.

Some April day, with tardy hints of spring
Upon the maples, robins on the wing,
And bluebirds warbling softly, blackbirds in
By the last train, when chickadees begin
To dream of love and home, — some April day
A startling, wakening song rings through the trees,
That drowns all sound and echoes overtake,
And in the treetops, flitting restlessly
From bough to bough, a purple finch I see,
Blushing unto his breast the while he sings
For very joy of speech, for love's dear sake, —
Who could not sing, knowing such ecstacy?
The bluebird wakens from his dream to hear,
And robin redbreast wondering draws near,
Alarmed at innovations such as these
From strangers singing in his own home trees.
Draught of the morning, warm and clear and sweet,
A sparkling, effervescing melody,
Freshly uncorked and running over, spilled
O'er every bough until the air is filled
With the song fragrance; hurrying, rushing on
In maddest haste lest springtime may be gone
Before his story is half told; so much to tell
And time so short, — a very rhapsody,
As if his throat would burst with all the song
Pent up within and gathering as it rose,
Rippling the feathers as it swept along
To meet the air, and charge the April day
With an electric fiery energy.
— Nelly Hart Woodworth, in the "Transcript."

The relations which our child population shall assume towards our birds, and living nature generally, is a matter of tremendous national and educational importance. Nothing is clearer than the fact that children are instinctively, incessantly, impulsively, explosively active; and, unless all possible channels of beneficent and delightful activity are laid wide open to them, it cannot fail

to happen, as Goethe so well says, "Nothing is more terrible than active ignorance." — C. F. HODGE, Clark University.

ROBIN REDBREAST.

Little children, do you know
How Robin came to be just so, —
A crimson spot upon his breast, —
The sweetest bird in any nest?

'Tis said that once, long, long, ago, —
The Bible gives the time, we know, —
But not the story I shall tell
About the bird we love so well.

Within a garden far away
Our Blessed Saviour went to pray;
To learn the Father's will, for Him
To save our world from death and sin.

O children dear, such pain He bore,
As never mortal knew before;
Great drops of blood for you and me,
He shed in lone Gethsemane.

And with the gleam of early day,
A little birdie flew that way,
And hush'd with awe his matin cheer,
When he beheld the Saviour near.

And hopping nigh, with gentle tread,
He lifted up his tiny head,
To see the face with tears distressed, —
When, lo! one dropped upon his breast!

And ever since that sad, sad morn,
All little robins have been born
(Ah, we will surely love him best)
With bright red spots upon their breast!
— LOUISE J. R. CHAPMAN. Written for "Grandmother's Children."

THE BLACKBIRDS' BREAKFAST.

Mr. Blackbird awoke in his dark pine-tree home
One bright early morning in spring,
Said he to his wife, "The time is now come
For us to get out on the wing;
The old farmyard hen is beginning to cackle,
I'll keep even with her, or my name isn't Grackle."

Said his wife, "Mrs. Redwing was over last night
To make us a short, friendly call;
She said that this morning, as soon as 'twas light,
We could come to their sycamore hall,
And we'd go to the cornfield and breakfast together,
And meet more of the folk of the rusty black feather."

Mr. Blackbird replied, with a bow and a quirk,
"As you please, dearest wife; you know best."
Then he straightened his tail with a queer little jerk,
And swelled out his greeny-blue vest.
And then from his place, with solicitous glances,
Peered his big yellow eyes, surveying their chances.

Soon down in the cornfield a wonderful sight,
As well as a wonderful sound!
A red flash, a black one as dark as the night,
And scarcely a bare patch of ground!
A flutter, a clutter, a patter, a clatter, —
This breakfast indeed is a sociable matter.

When all of the grubs and the cut worms are gone,
And a few of the best hills of corn,
Then a bevy of birds, as with instinct of one,
Rise like a dark cloud on the morn.
The good-byes are said by this party so clannish,
And away to their homes in the tree tops they vanish.

— MARY NOLAND.

If every bird had his vocation, as a poetical French writer suggests, that of the American robin must be to inspire cheerfulness and contentment in men. His joyous "Cheer up! Cheer up! Cheery! Be Cheery!" poured out in the early morning from the top branch of the highest tree in the neighborhood, is one of the most stimulating sounds of spring. Besides admonishing others to cheerfulness, the robin sets the example. Not only is his cheering voice the first

in the morning and the last at night of the day birds, but no rain is wet enough to dampen his spirits. — Olive Thorne Miller, "In Nesting Time," p. 2.

The oriole queries, "Will you? Will you truly?"
The meadow lark answers, "Spring of the year."
— Mabel Osgood Wright.

Longfellow tells how Emperor Charles of Spain once, during a siege of Flanders, protected a swallow and her brood. The swallow came and built her nest above the emperor's tent, and he gave the order that no one should molest her.

So unharmed and unafraid
Sat the swallow still and brooded,
Till the constant cannonade
Through the walls a breach had made
And the siege was thus concluded.

Then the army, elsewhere bent,
Struck its tents as if disbanding,
Only not the emperor's tent,
For he ordered, 'ere he went,
Very curtly, "Leave it standing!"

So it stood there all alone,
Loosely flapping, torn and tattered,
Till the brood was fledged and flown,
Singing o'er those walls of stone
Which the cannon-shot had shattered.
— Longfellow.

OUTDOORS, — NATURE.

When I am weary heart and brain,
I go outdoors;
When I am under stress and strain,
I go outdoors.
'Tis there I find the needed rest,
Of all earth's comforters the best;
"Hope springs eternal in the breast,"
Outdoors!
When I am seeking after wealth,
I go outdoors;
When I am seeking perfect health,
I go outdoors.
I go into the field and wood,
A storehouse filled with all things good, —
My medicine, my drink and food,
Outdoors!
— Joe Cone, in "Outdoors," April, 1906.

Knowing that Nature never did betray
The heart that loved her; 'tis her privilege,
Through all the years of this our life, to lead
From joy to joy: for she can so inform
The mind that is within us, so impress
With quietness and beauty, and so feed
With lofty thoughts, that neither evil tongues,
Rash judgments, nor the sneers of selfish men,
Nor greetings where no kindness is, nor all
The dreary intercourse of daily life,
Shall e'er prevail against us, or disturb
Our cheerful faith, that all which we behold
Is full of blessings.
— Wordsworth.

Climb the mountains, and get their good tidings. Nature's peace will flow into you as sunshine flows into trees. The winds will blow their own freshness into you, and the storms their energy, while cares will drop off like autumn leaves. — John Muir.

Free Health.

Better to hunt in fields for health unbought,
Than fee the doctor for a nauseous draught.
The wise for cure on exercise depend;
God never made his work for man to mend.

There is no tonic like cold water, fresh air and sunshine. Dead cells cannot exist where these three elements enter in.

It seems to me that all the master-spirits of the ages, the poets, prophets and craftsmen whom we now call immortal, must have lived and worked upon the hills, where they could see the sunrise and the sunset and feel the winds and storms, and have the broad, free sweep of view which every great soul craves. It seems to me such things as these must be essential to the making of a master.

Whatever your occupation may be, and however crowded your hours with affairs, do not fail to secure at least a

few minutes every day for refreshments of your inner life with a bit of poetry. — CHAS. ELIOT NORTON.

Even the real troubles can be better borne when the sap flows free in the new leaf; and when the first robin calls "Hurry up and cheer up," I would lean out of the window of my grief and learn of him, if I were you.

It is a great pity that so many persons never get acquainted with nature, for she is one of the best and wisest of friends.

Every one ought to be on terms of personal affection with some noble tree. It is a friendship worth cultivating. — JOHN WRIGHT BUCKHAM.

Ex-Judge Moulton says: "The taking of long tramps through the fields and woodlands and over the mountains is the elixir of life. If I had not indulged in outdoor sport as I have done for years, I would long ago have been counted among the departed."

GETTING CLOSE TO NATURE.

Dr. Fridtjof Nansen, Norway's famous Arctic explorer, now minister to Great Britain, says: "There never was such misplaced sympathy as commiserating a man who has lived in the wilds. Most men who travel in out-of-the-way parts of the earth do so because they like it. People who live in the center of what is called civilization do not understand, cannot realize, the spell that getting close to nature, battling with nature, has on the heart."

I know now the secret of making the best persons. It is to grow in the open air, and to eat and sleep with the earth. — WALT WHITMAN.

TWO SCHOOLS.

I put my heart to school
  In the world, where men grow wise;
"Go out," I said, "and learn the rule;
  Come back when you win the prize."

My heart came back again;
  "And where is the prize?" I cried.
"The rule was false, and the prize was pain,
  And the teacher's name was Pride."

I put my heart to school
  In the woods, where wild birds sing,
  In the fields where flowers spring,
  Where brooks run cool and clear
  And the blue of heaven bends near.
"Go out," I said, "You are only a fool,
  But perhaps they can teach you here."

"And why do you stay so long,
  My heart, and where do you roam?"
The answer came with a laugh and a song, —
  "I find this school is home."
— HENRY VAN DYKE, in "Atlantic Monthly."

"Accuse not nature, — she hath done her part;
Do thou but thine."
— JOHN MILTON.

Irving said: "Come to Sunnyside, and I will give you a book and a tree."

In fact, there's nothing that keeps its youth
So far as I know, but a tree and truth.
— HOLMES.

There is no unbelief:
Whoever plants a seed beneath the sod
And waits to see it push away the clod,
He trusts in God.
Whoever says, when clouds are in the sky,
Be patient, heart, light breaketh by and by,
Trusts the Most High.
Whoever sees, 'neath field of winter snow,
The silent harvest of the future grow,
God's power must know.
— BULWER LYTTON.

NATURE AND CRIME.

Climb clean above the roof and look from the steeple,
And never see a robin, nor a beech or ellum tree!
. . . but the city! city! city!
And nothin' but the city all around us ever'wheres.

There is something infinitely pathetic in the thought of thousands of young

children who have never seen a green field or a bit of woodland, who never have heard the singing of the wild birds on a blithesome summer morning, whose lives never widen beyond the brick walls of dark and gloomy courts, and whose knowledge of nature, if they have any such knowledge at all, is confined to a tiny patch of blue sky overhead, and a poor little geranium growing in a half-hearted way in the most exposed window.

It is not the country-bred boy that turns criminal. Murderers, thugs and safe-breakers are not made out among the fields, the trees and hills. It is stated that, of the three hundred boys at the Massachusetts Reform School, when a canvass was made recently, there was not one country-bred lad among the number. If your boy is growing to manhood in close association with the things of nature, thank God that he has the privilege, and give a thought to the youngster who would not know a sunflower from a rose, or a bat from a humming-bee.

Boyhood.

O waters still, O sloping hill,
  O mountains blue and far,
On every side encircling wide
  The path of sun and star;

O laughing brook, where bent-pin hook
  Dangled the summer day,
While sun and shade through field and glade
  Ran with the hours away;

O dusty road, by tired feet trod;
  O meadow fair and broad,
Where brisk bees hum and insects thrum,
  And grass and daisies nod;

O wood retreat, all still and sweet,
  Thrill'd through with wild bird song,
Recesses deep where sorrows sleep,
  And dreams and visions throng, —

Thanks from the boy whose cup of joy
  You filled to very brim,
The while there stole through all his soul
  Dear nature's low, sweet hymn.

— John Wright Buckham.

Goin' Barefooted.

It's more fun goin' barefoot than anythin' I know,
  There ain't a single nother thing that helps your feelin's so.
Some days I stay in muvver's room, a-gettin' in her way,
  An' when I've bothered her so much, she sez, "Oh, run and play!"
I say, "Kin I go barefoot?" En she sez, "If y' choose."
  Nen I alwuz wanter holler when I'm pullin' off my shoes!

It's fun a-goin' barefoot when yer playin' any game,
  'Cause robbers would be noisy, an' Indians awful tame
Unless they had their shoes off when they crep' up in the night,
  An' folks can't know they're comin' till they get right close in sight.
An' I'm surely goin' barefoot every day when I get old,
  An' haven't got a nurse to say I'll catch my death of cold.

An' if your goin' barefoot, yer want to go outdoors;
  Y' can't stretch out an' dig yer heels in stupid, hardwood floors,
Like you can dig 'em in th' dirt. An' where th' long grass grows,
  Th' blades feel kinder tickley and cool between yer toes.
So when I'm pullin' off my shoes I'm mighty 'fraid I'll cough,
  'Cause then I know Ma'd stop me 'fore I got my stockin's off.

If y' often go 'round barefoot there's lots o' things to know, —
  Of how to curl yer feet on stones, so they won't hurt y' so;
An' when th' grass is stickley, an' pricks y' at a touch,
  Jes' plank yer feet down solid, an' it don't hurt half so much.
I lose my hat mos' every day, — I wish I did my shoes;
  Er else I wisht I was so poor I hadn't none to lose!

— Burges Johnson, in "Harper's Magazine."

AN AUTUMN DRIVE.

Out into the dusk of the woodland,
We drive at the close of day;
From the glow and the gleam and the glimmer, —
Away and away and away!

Around us, the grand forest monarchs,
Serene with the ages untold;
Before us, the mountain majestic,
With strength from the centuries old.

Above us, the leafage of autumn,
The oak and the maple and pine;
Beneath and beyond us, in beauty
The riotous woodbines entwine.

Over all, the blue of the heavens;
On the mountain, a tinge as of rose;
And low in the tender warm ether
The young moon trustfully goes.

The breath of the pure, fragrant balsams,
The freshness of on-coming night,
The pungence of wood-loam and pine-sap,
Rise softly in mystic delight.

Clean boles of the stalwart great pine trees
Form arches and deep colonnade;
While with music of breeze and of bird song
Their branches are sweetly inlaid.

Golden beeches that shimmer and shiver,
As with sunshine held fast from the day,
Send down through the dusk of the twilight
Their fluttering messengers gay.

Brilliant maples in scarlet and crimson,
Out-flashing and rippling with light;
Bright fires in the blushing thickets
That startle the wondering sight.

Deep bronzes and ambers and crimsons,
From the broad-branching oaks of might;
And slender white birches that glimmer
Like spirits of mist and of night.

A flush as of dawn on the bracken
That carpet the grove far and wide;
While russet-brown needles are scattered
The wandering wood path beside.

Amber glints from the underbrush lowly;
Coral gleams from the rose-tree of June;
Purple berries on vines and on bushes
With the harmony truly attune.

And out through the fluttering branches
Flits the flash of the bluebird's wings,
And far down the shadowy roadway
A single sweet whip-poor-will sings.

The softness, the wonder, the mystery,
That come at the close of the day,
Enwrap us, enfold us and keep us
As we traverse this marvelous way.

The strength that comes from the mountains;
The beautiful colors of fall;
Sweet peace of the forest primeval;
The breath of God's love over all.

— LYDIA KENDALL FOSTER, in the "Sunday Republican."

BOOKS FOR SUMMER READING.

In the list of books for summer reading, include some of the following: —

"A Guide to the Trees," Alice Lounsbury.

"Old Paths and Legends of New England," Katherine M. Abbott.

"In Nesting Time," Olive Thorne Miller.

"Nature Study Leaflet, — Our Common Birds," C. F. Hodge.

"Typical Elms and Other Trees of Massachusetts," L. L. Dame.

"Flowers and Ferns in their Haunts," Mabel Osgood Wright.

"A Journey to Nature," J. P. Mowbray.

"The Country Home," E. P. Powell.

"Silas Strong," Irving Bacheller.

SUGGESTIVE NOTES FOR SUMMER VACATIONS.

HERBARIUMS.

Children love to gather all kinds of specimens. This is not vandalism if proper directions are given in advance of the work; it rather teaches them to love all nature.

Many school children take long journeys during vacation weeks, and could be rightly instructed to make herbariums of tree leaves, grasses, mosses, ferns and wild flowers, which would prove very helpful during the winter months for story writing, etc. This work has been successfully tried by the Massachusetts

Horticultural Society, and varied methods could be adopted by schools, organizations or individuals, awarding prizes or honorable mention whenever it seemed advisable. By way of preparation, teach children: —

To gather single specimens.

Never to pull up the roots of a plant.

To make observation notes as they gather.

To carry with them an old book in which to press specimens as soon as gathered.

To label all specimens as far as possible.

To gather only where nature has planted in profusion.

To mount neatly on paper sheets by using narrow strips of mucilage-paper.

(Child life is incomplete without its armful of wild flowers. Nature never puts up the sign "No Trespassing.")

Nature Journeys.

Take the children to such places as: —

Arnold Arboretum, — Boston;

Harvard Botanical Gardens, — Cambridge;

Hemlock Gorge, — Newton;

Lynn Woods, — Lynn;

Waverley Oaks, — Waverley;

Blue Hill Reservation, — Milton;

Middlesex Fells, — Melrose; and other park reservations where nature abounds, and which may be convenient to any given locality.

Visit the historical trees: —

Washington Elm, — Cambridge;

Gingko Tree, — Boston Common;

Eliot Oak, — Natick;

Endicott Pear Tree, — Danvers;

Sycamores, — Haverhill;

Avery Oak, — Dedham.

(Remember the Alpheus Hyatt Fund, which gives city children a day in the country.)

(Put up bird boxes, and protect the native birds. They help to control insect ravages.)

Come to me, O ye children!
And whisper in my ear
What the birds and the winds are singing
In your sunny atmosphere.